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(21) International Application Number: PCT/FI00/00306 (22) International Filing Date: 12 April 2000 (12.04.00) (30) Priority Data: 990855 16 April 1999 (16.04.99) FI (71) Applicant (for all designated States except US): IDO KYLPYHUONE OY [FI/FI]; Koivuniemen teollisuusalue, FIN-10600 Tammisaari (FI). (72) Inventors; and (75) Inventors/Applicants (for US only): BERGDAHL, Mats [SE/SE]; Liljevägen 87, S-194 60 Upplands Väsby (SE). NIEMINEN, Olli-Pekka [FI/FI]; Tuomistonkatu 9, FIN-26200 Rauma (FI). (74) Agent: AWEK INDUSTRIAL PATENTS LTD OY; P.O. Box 230, (John Stenbergin ranta 2), FIN-00101 Helsinki (FI).		(81) Designated States: AE, AG, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), DM, DZ, EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR (Utility model), KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: FIXTURE UNIT (57) Abstract <p>Fixture unit for a shower cabin (1) comprising fixture, such as mixing taps, temperature controls and possible regulating or control devices. The fixture unit (3) comprises a detachably mountable fastening plate (4) and releasably fastenable couplings for attaching the fixture to water mains and electrical connections. The fastening plate (4) is arranged to be fastened in an opening in a column (2) in the shower cabin (1).</p> <div style="text-align: center;"> </div>		

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FIXTURE UNIT

Technical Field

The invention relates to a fixture unit for a shower arrangement or the like comprising fixture such as mixing taps, temperature controls, possible regulating or control devices and the like according to the preamble of claim 1.

Background Art

In previously known solutions the fixture is usually arranged directly fastened to or as an insert in a wall or separate column in the shower arrangement, for example a shower cabin or the like. This first of all implies complicated and extensive installation work. Furthermore, when the fixture is installed, its dismounting, for example for maintenance or repair, requires that the whole installation is taken apart, which is expensive and time consuming. This is naturally also the case concerning conventional faucet or shower installations in connection with bathtubs and the like.

Disclosure of the Invention

The object of the present invention is to achieve a fixture unit by which the above mentioned drawbacks are avoided and which provides for simple manufacturing and flexible use. This is attained by a fixture unit according to the invention, the main features of which are given in claim 1.

The invention is based on the concept to achieve a mainly independent multifunctional unit, which conveniently can be connected and disconnected when necessary. This is provided for by connecting the fixture to a releasably mountable fastening plate, which is arranged to be fastened in an opening in a fastening base, for example a wall or column. Furthermore, the fixture couplings are arranged so that they are releasably connectable to the respective water mains and/or electrical couplings. In this way the fixture and thereto belonging couplings may easily be disconnected for maintenance, for example cleaning of water filters, or repair by dismounting the fastening plate. The fixture may be reinstalled as easily by refastening the fastening plate including the couplings to the fastening base.

The fastening plate is advantageously made of a rigid material, for example of aluminum plate, whereby the fastening plate at the same time may be provided with fastening elements in order to fasten it to the fastening base. The advantage with aluminum plate is that it is easily workable, of little weight and resistant to corrosion. Naturally the fastening plate may be manufactured of other corresponding suitable materials.

In order to facilitate installation of the fastening plate the fastening plate may be provided with a fastening element, which is intended for engagement with an inner surface of the fastening base. The advantage with this is that the fastening plate in this way conveniently may be positioned and directly be inserted in a correct position in the fastening base.

The fastening plate is preferably provided with a sealing element, which for example may be an injection moulded sealing component that surrounds the fastening plate. In this way a secure sealing is attained without any additional measures.

The fastening plate is further preferably provided with a grip element that functions as a receiving surface and/or a hanger hook, in other words as a shelf with a handle and a possibility to hang soaps, shampoo bottles, cleaning brushes, etc. Such a grip element is also suitable as a support handle when one moves around in a slippery washing space, for example a shower cabin or the like. Furthermore, such a grip element facilitates handling and fastening of the fixture unit.

The grip element may be arranged independent from or separately fastenable to the fastening plate and its fixture, which for example provides for a possibility to use different grip elements according to need. In this case, the grip element is preferably arranged to receive fastening elements for fastening the grip element and the fastening plate to the fastening base. Furthermore, the grip element is preferably provided with fixation elements, which tighten the fastening plate against the fastening base.

The grip element may also be fixed to the fastening plate. The fixed grip element facilitates handling of the fastening plate. The grip element

is preferably in this case arranged to receive fastening elements in order to fasten the grip element and the fastening plate to the fastening base.

If one desires not to use a grip element the fastening plate itself has to be provided with fastening elements in order to fasten the fastening
5 plate to the fastening base.

The grip element can naturally also separately be fastened only to the fastening plate.

Suitable fastening elements in the above mentioned cases are for example bolt or screw devices that easily may be fastened and removed.

10 The invention is described more in detail in the following by way of example with reference to the attached drawings, in which:

Fig. 1 shows a shower cabin where the invention is applied.

Figs. 2, 2a and 2b show exploded views of different embodiments the fixture unit.

15 Fig. 3 shows fixture couplings of the fixture unit according to Fig. 2.

Fig. 4 shows the grip element of the fixture unit according to Fig. 2.

Fig. 5 shows a further embodiment of the fixture unit.

20 Fig. 6 shows the fixture unit according to Fig. 5.

In Fig. 1 a shower cabin is indicated by reference numeral 1. The shower cabin is installed in a corner of a wet room, for example a bathroom. The farther corner of the shower cabin 1 comprises a column 2 constituting a fastening base in which a fixture unit 3 comprising a releasably mounted fastening plate 4 as well as fixture, such as mixing taps, a temperature control
25 unit, regulating or control devices or the like, are installed.

Figs. 2, 2a and 2b show different embodiments of the fixture unit including its fastening plate 4 detached from the column 2, or more exactly from an opening 10 in the same. Embodiment 3a comprises mixing taps 5,6
30 and shower coupling 7; embodiment 3b comprises mixing taps 5,6, a shower coupling and steam regulator 8, and embodiment 3c comprises a mixing tap 5,6, a shower coupling 7, a steam regulator 8 and electronic controls 9. With

regard to these embodiments the grip element 12 is releasable in relation to the fastening plate 4. The grip element 12 is in the form of a shelf provided with a hand grip portion 15.

In Fig. 3 is shown more in detail how the fixture unit 3a, including the fastening plate 4 and the grip element 12, and the thereto connected couplings are arranged. The figure shows the side of the fixture unit 3a which is to be installed towards the opening including mixing taps 5,6 and shower coupling 7 provided in the fastening plate according to Fig. 2. In this case the couplings comprise warm and cold water pipes 18 and 19 which are connected by respective coupling means, for example threaded couplings 20 and 21, to a distribution pipe 22. By dismounting the fastening plate 4 including fixture 5,6,7 from the opening 10 in the column 2, the water pipes 18 and 19, couplings 20 and 21 and the distribution pipe 22 and for example thereto belonging filters and seals are easily accessible for maintenance, repair or replacement. Furthermore, as is shown in the embodiments of Figs. 2a and 2b, the couplings may comprise steam apparatus, electronics, etc., which in a corresponding way need supervision, which in the described manner conveniently may be done with the fixture unit according to the invention.

As shown in Fig. 4 the grip element 12 is in the form of a receiving surface or shelf. The shelf is provided with a hand grip portion 15, which conveniently may be used as a support for example in connection with taking a shower and on which one also may hang for example shampoo bottles or the like furnished with a suitable hook means. The grip element 12 is detachable in relation to the fastening plate, whereby it preferably is provided with fixation elements 16, which are intended to rest against the fastening plate 4 for tightening the fastening plate against the opening 10 in the column 2 when the grip element 12 is fastened to the column by means of the screw devices 14.

In Figs. 5 and 6 is shown a further embodiment of the fixture unit. The fixture unit is 3d provided with mixing taps 5,6 and a shower coupling 7. The releasably attachable cold and warm water pipes are indicated by 18 and

19. In this embodiment the grip element 12, in the form of a shelf and including a hand grip portion 15, is fixed in relation to the fastening plate 4. The fastening plate 4 is shown detached from the opening 10 in the column 2. Furthermore, the fastening plate is arranged to receive fastening elements, for example screw devices 13,14, in order to fasten the same in the opening 10 in the column 2.

In Figs. 2 to 3, 5 and 6 is shown that the fastening plate 4 also includes a fastening element 11, which is intended for engagement with the inner surface of the column 2, behind the edge of the opening 10. The fastening element 11 facilitates positioning of the fastening plate 4 in the opening 10 in the column 2 and also it fastens the fastening plate in the opening in interaction with the grip element 12 and thereto belonging screw devices 13,14, which are shown in a released position in Figs. 2, 4 and 6.

The fastening plate 4 is preferably provided with a sealing means 17 intended to obtain a tight connection between the fastening plate 4 and the opening 10 in the column 2. The sealing element is preferably injection moulded in accordance with the fastening plate and the opening. The sealing element is shown only in Fig. 2a, however, it should be understood the sealing element 17 may be used in all the embodiments shown.

The fixture unit can naturally also be used without the grip element, whereby the fastening plate is provided with appropriate fastening elements for fastening the same to the opening in the column. In addition the grip element may be provided in various models and thereby suitable for different applications. The use of the fixture unit is not limited to shower cabins, but it may as well be used with other corresponding installations, such as bath tubs, wash basins, sinks, etc.

The drawings and the thereto attached description is only intended to clarify the inventive concept. In detail, for example application, form, material, fixture, couplings and fastening means, the invention may vary within the scope of the claims.

CLAIMS

1. Fixture unit for shower arrangement or the like comprising fixture (5,6,7,8,9) such as mixing taps, temperature controls, possible regulating or control devices and the like, **characterised in that** the fixture unit (3;3a;3b;3c;3d) comprises a detachably mountable fastening plate (4) with thereto attached said fixture (5,6,7,8,9), that the fixture unit (3;3a;3b;3c;3d) comprises means (20,21) for connecting of releasably fastenable, to the fixture (5,6,7,8,9) connectable water mains, electrical couplings and the like, and that the fastening plate (4) is arranged to be fastened in an opening (10) in a fastening base (2), for example a wall or column in connection with the shower arrangement.
2. Fixture unit according to claim 1, **characterised in that** the fastening plate (4) is made of a rigid material, for example aluminum, and that the fastening plate comprises a fastening element (11) for fastening it to the fastening base.
3. Fixture unit according to claim 2, **characterised in that** at least one fastening element (11) is arranged to engage with the inner surface of the fastening base (2).
4. Fixture unit according to claim 1 or 2, **characterised in that** the fastening plate (4) is provided with at sealing element (17) between the fastening plate (4) and the fastening base (2).
5. Fixture unit according to claim 1 or 2, **characterised in that** the fastening plate (4) is provided with a grip element (12,15), preferably providing a receiving surface and/or a hanger means.
6. Fixture unit according to claim 5, **characterised in that** the grip element (12,15) is releasable in relation to the fastening plate (4).
7. Fixture unit according to claim 6, **characterised in that** the grip element (12,15) has fixation elements (16) for tightening the fastening plate (4) against the fastening base (2).
8. Fixture unit according to claim 5, **characterised in that** the grip element (12) is fixed in relation to the fastening plate (4).

9. Fixture unit according to any of claims 5 to 8, characterised in that the grip element (12) or fastening plate (4) is arranged to receive fastening elements (13,14) in order to fasten the same to the fastening base (2).
10. Fixture unit according to claim 9, characterised in that fastening elements
- 5 comprise bolt or screw devices (13,14).

1 / 5

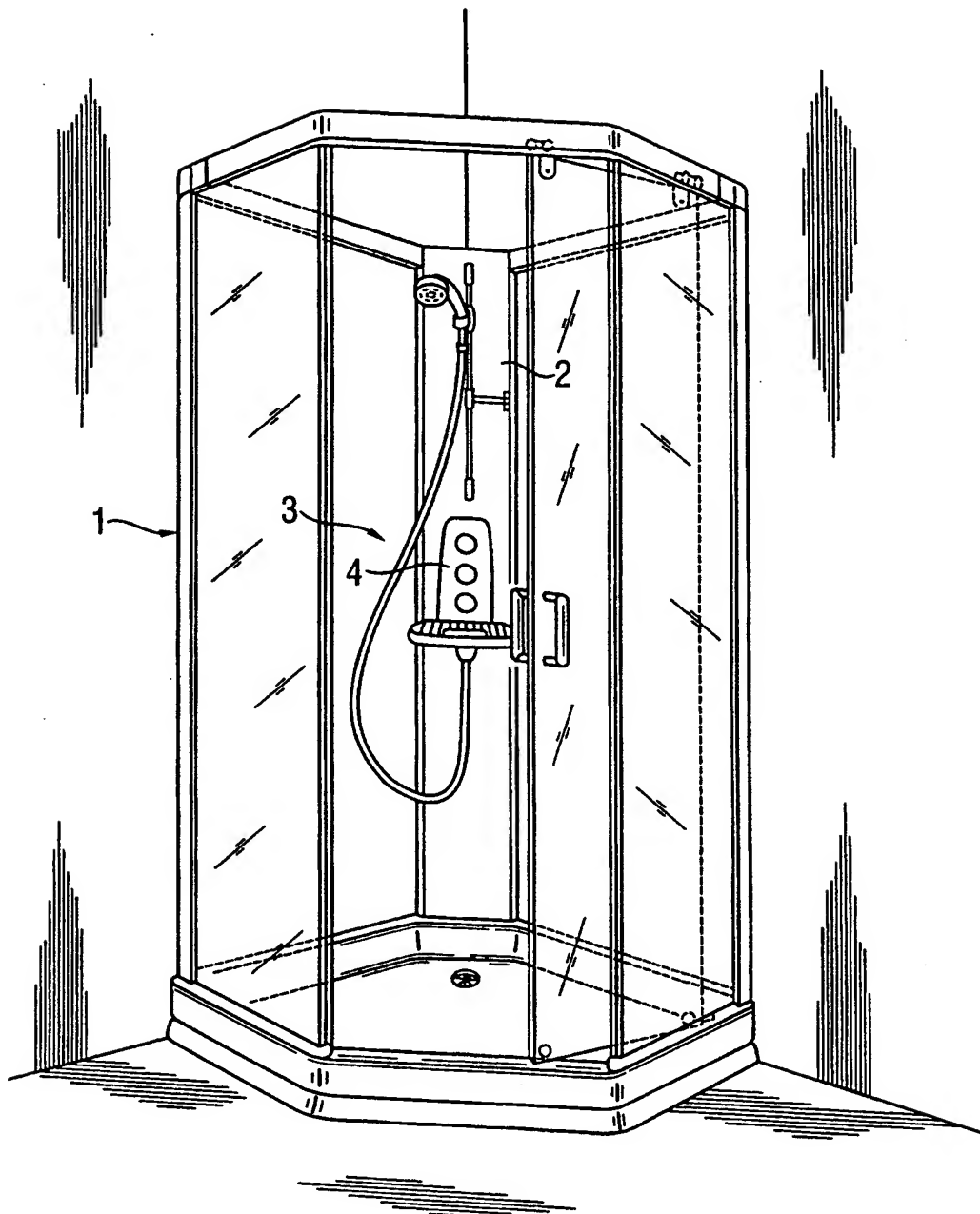
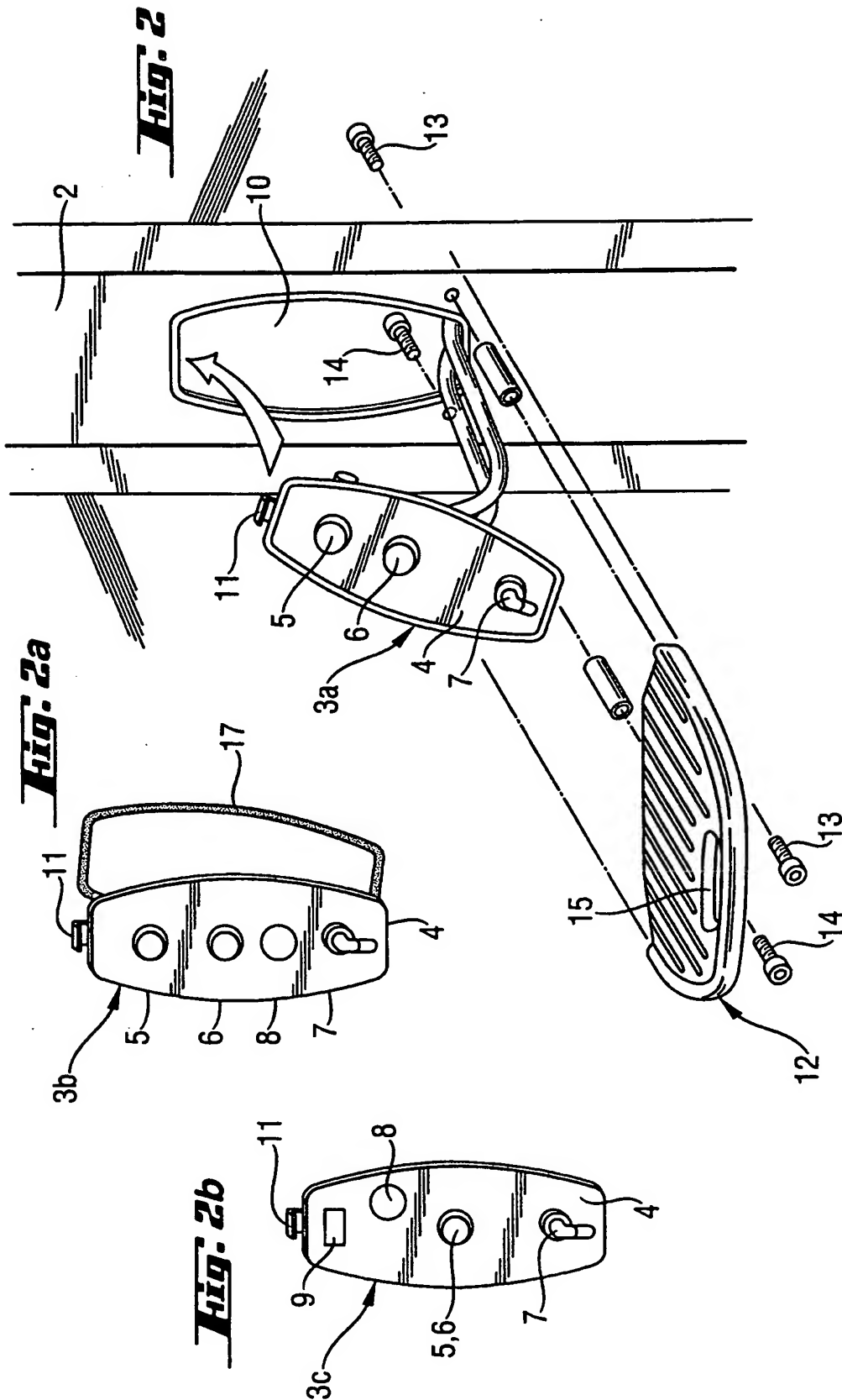
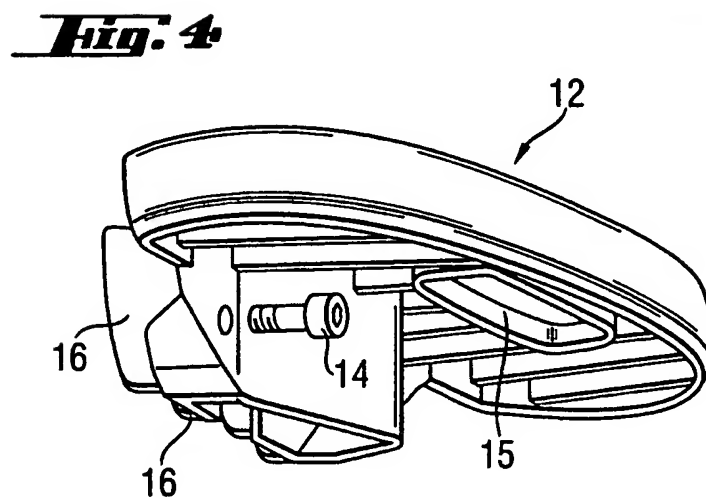
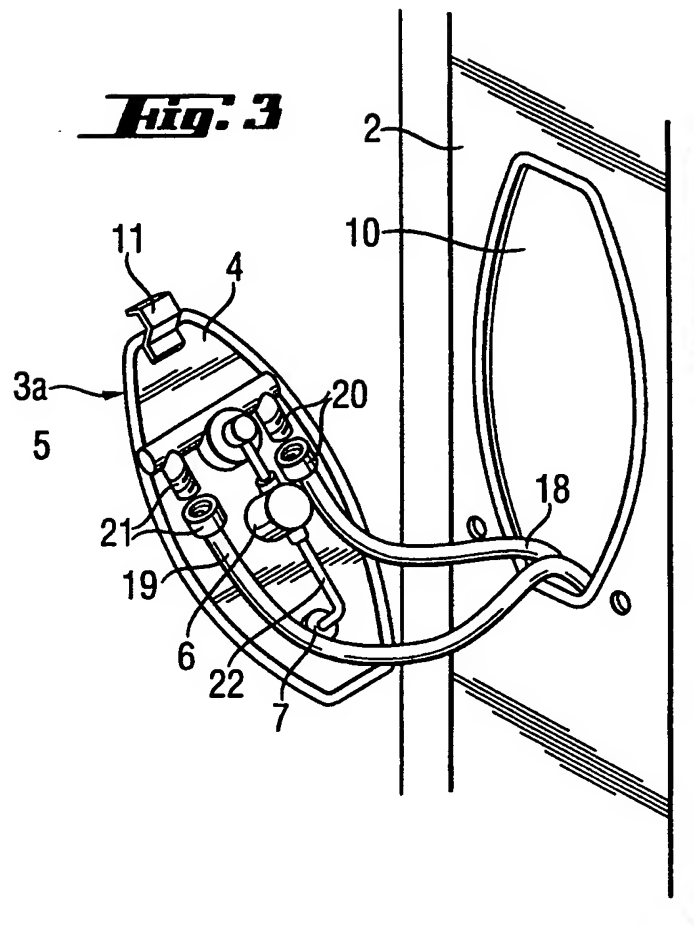


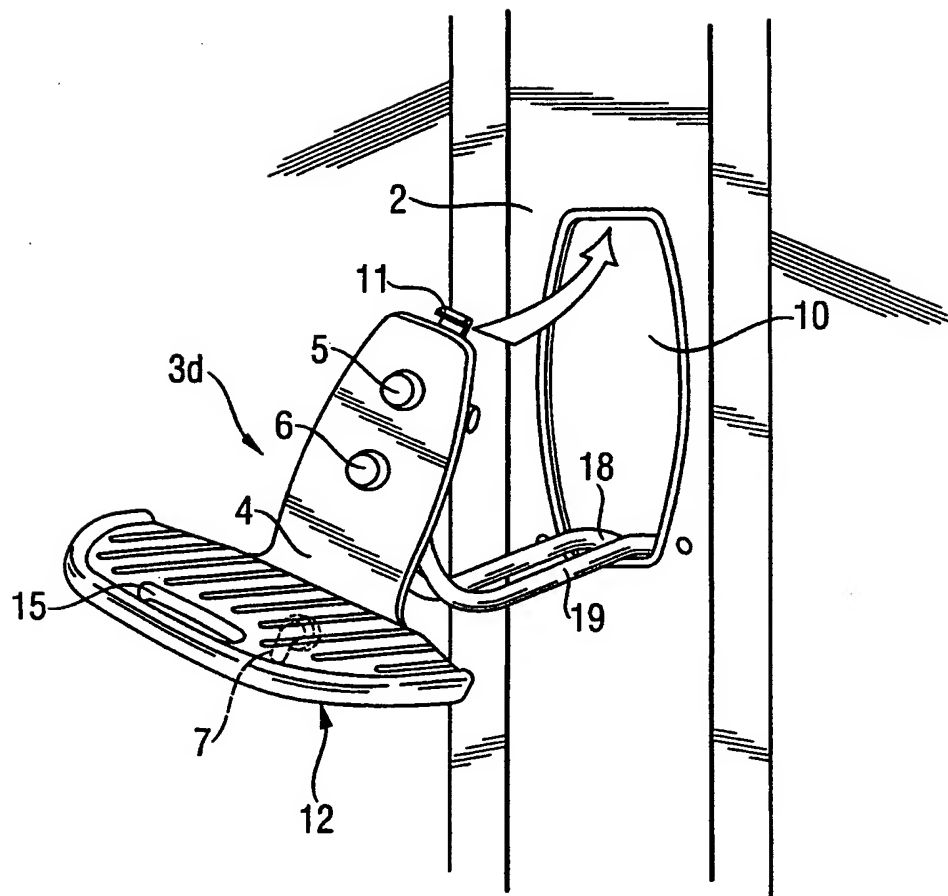
Fig. 1

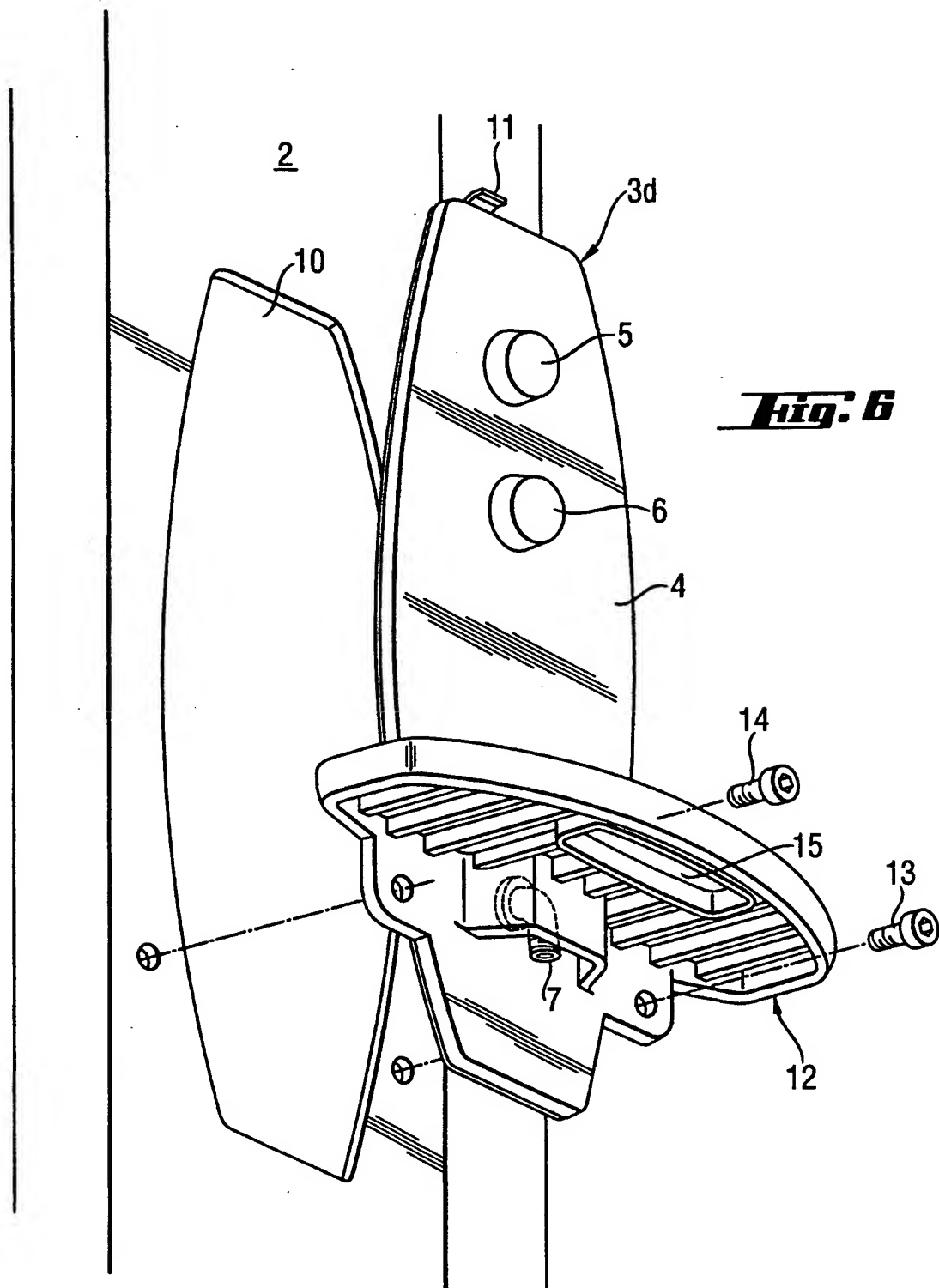


3 / 5



4 / 5

**Fig. 5**



INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 00/00306

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A47K 3/28, E03C 1/04, E03C 1/042

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A47K, E03C, F16K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5277220 A (ALFONS THUL), 11 January 1994 (11.01.94), column 2, line 11 - line 20; column 2, line 29 - line 34; column 2, line 38 - line 56, figures	1-5
Y	--	6-10
X	US 5813431 A (LONNIE F. COOL), 29 Sept 1998 (29.09.98), column 1, line 44 - line 53; column 2, line 34 - line 56	1
Y	--	6-10
Y	US 3827088 A (DON C. ARNOLD ET AL), 6 August 1974 (06.08.74), column 3, line 26 - line 47, figures 1, 2,5	6-10
	--	



Further documents are listed in the continuation of Box C.



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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	WO 98/41700 A1 (RAF RUBINETTERIE S.P.A), 24 Sept 1998 (24.09.98), abstract, figures -- -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

02/12/99

International application No.

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